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# Understand the purpose and context

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The University of Melbourne

Australian Government Department of Industry, Innovation and Science

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# Learning outcomes

- Be able to define your primary purpose for conducting an Research Impact Assessment (RIA)
- Evaluate and articulate the context in which you are conducting your RIA

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# The purpose: 4 A's

- Accountability
- Advocacy
- Analysis
- Allocation

## The need for RIA

*To manage and use research funds in the best way possible*

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# Accountability

- ✓ Spending funds as you said you would
- ✓ Need to demonstrate accountability for the investment of public funds in research
- ✓ Important for all public funders

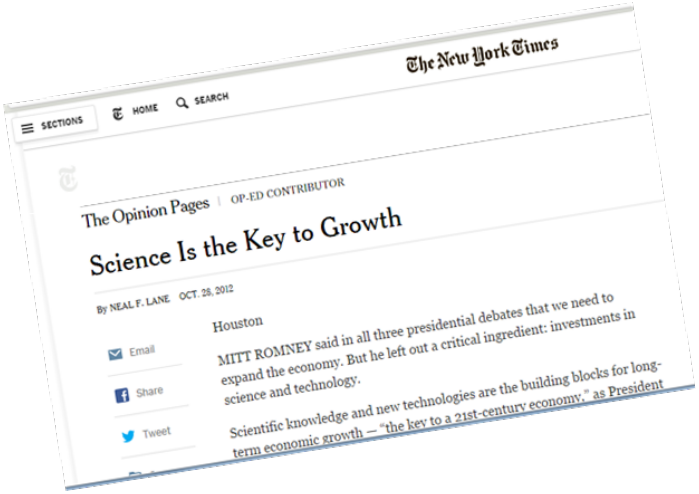
Is accountability really just about how you have spent the money?

… or is it a social contract?

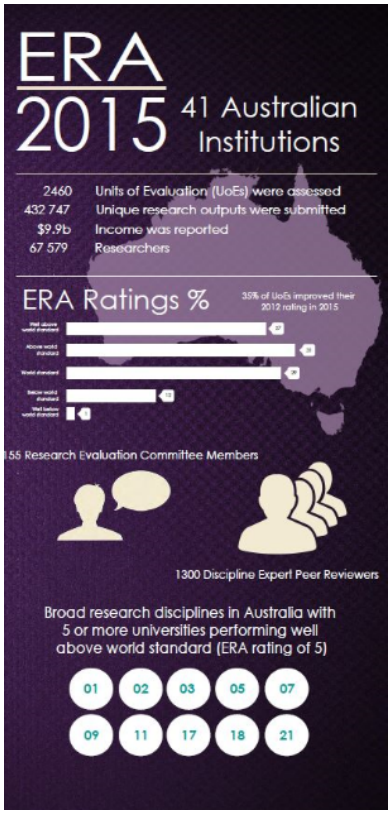
- Using public money to provide value to the public
- Demonstrating a societal return

It is becoming increasingly important…

- With pressure to reduce public spending, there is greater emphasis on transparency and efficiency
- Focus on science as a way of growing the economy




# Example of accountability




An assessment system, administered by the Australian Research Council, which evaluates the research quality of all Australian universities.

**Key role in accountability**: *"an evaluation framework that gives government, industry, business and the wider community assurance of the excellence of research"*

Also used for advocacy and now for allocating performance-based block funding




| Principles | Indicators |
|---|---|
| ❖ Quantitative<br>❖ Internationally recognised<br>❖ Comparable<br>❖ Able to be used to identify excellence<br>❖ Research relevant<br>❖ Repeatable and verifiable<br>❖ Time-bound<br>❖ Behavioural impact | ➢ Research quality *(citation data or peer review)*<br>➢ Research volume/ activity *(direct outputs, research income)*<br>➢ Research application *(commercialisation, citation on guidelines)*<br>➢ Recognition *(esteem measures)* |

# Strengths and weaknesses

*Latest NISA policy requires universities to begin reporting impact*


**Strengths**

- Compliance from the research community in Australia
- Burden on participants is moderate
- Data accessible (engagement indicator driven)
- Produces a single performance indicator, which can be used for ranking
- Recognises multi-disciplinary work

**Weaknesses**

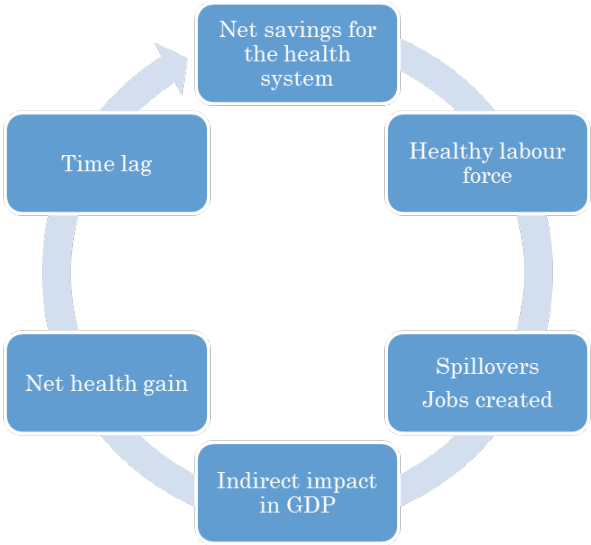
- Indicator driven to capture engagement only
- Still moderated through peer review, reducing objectivity
- Does not capture societal or environmental impacts comprehensively
- Requires some central expertise (e.g. bibliometric expertise on panel)

# Advoca
# cy

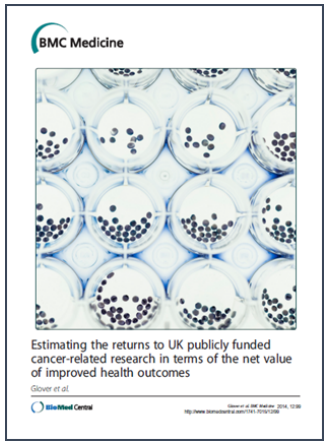
| Why<br>*use advocacy?* | When<br>*to take an advocacy approach?* | Who<br>*is the target audience of your advocacy exercise?* |
|---|---|---|
| • To make the case for (more) support in research<br>• To secure funding in context of austerity<br>• To make the case for research of quality (avoid waste) | • You want to get additional funds<br>• Redirection of government priorities/ strategies<br>• Government departments looking to secure funding in austerity periods<br>• Changing funding cycles<br>• Research Institution wanting to take a strategic reorientation<br>• Riding on public opinion | • Public or private funders<br>• Research users (e.g. health services, consumers)<br>• Academia<br>• Industry<br>• Governing bodies<br>• General Public |

## Making the case for research

*Target economic returns and other measures people care about*



# Examples of advocacy




**Estimating economic and health benefits of cancer research in the UK**

Spillover around 33%

Health gain: 7-10 %

Time-lag: 17-19 years


**Short term economic impact in Catalonia**


**DIRECT IMPACT**
- Output: 34,4 M€
- Gross Value Added: 18,8 M€
- Employment: 572 jobs
- Fiscal revenues: 4 M€

**INDIRECT IMPACT**
- Output: 17,6 M€
- Gross Value Added: 6,5 M€
- Employment: 93 jobs

**INDUCED IMPACTE**
- Output: 16,1 M€
- Gross Value Added: 8,3 M€
- Employment: 169 jobs
- Fiscal revenues: 6,6 M€

68,1 M€ activity
33,6 M€ de gross value added
834 jobs
10,6 M€ fiscal revenues

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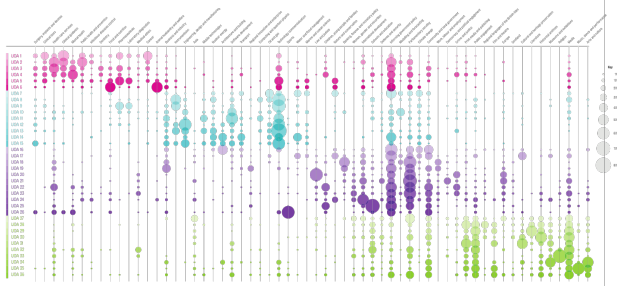
# Analysis

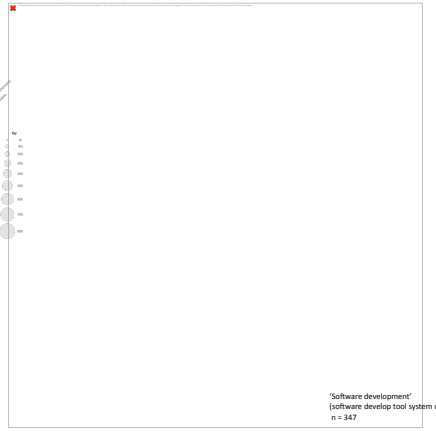
## Understanding what works

# Example of analysis

## 60 impact topics identified

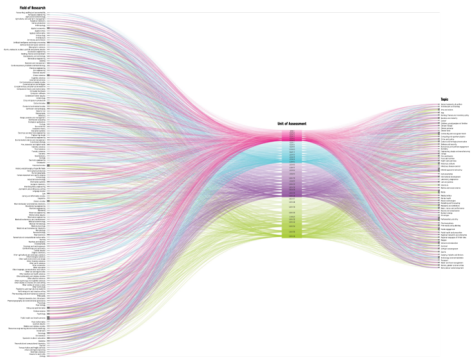
## Different types of impact are more common in different disciplines



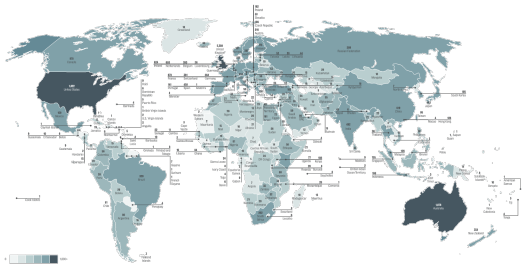




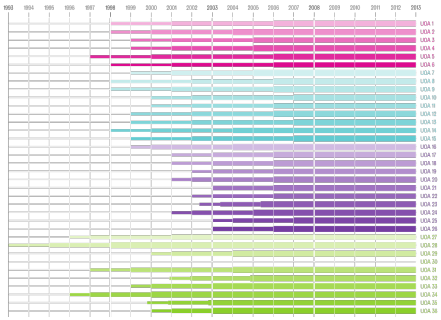
## There is a diverse range of impact pathways



## UK Higher Education Institutes have a global impact



## The time it takes to have an impact varies by discipline

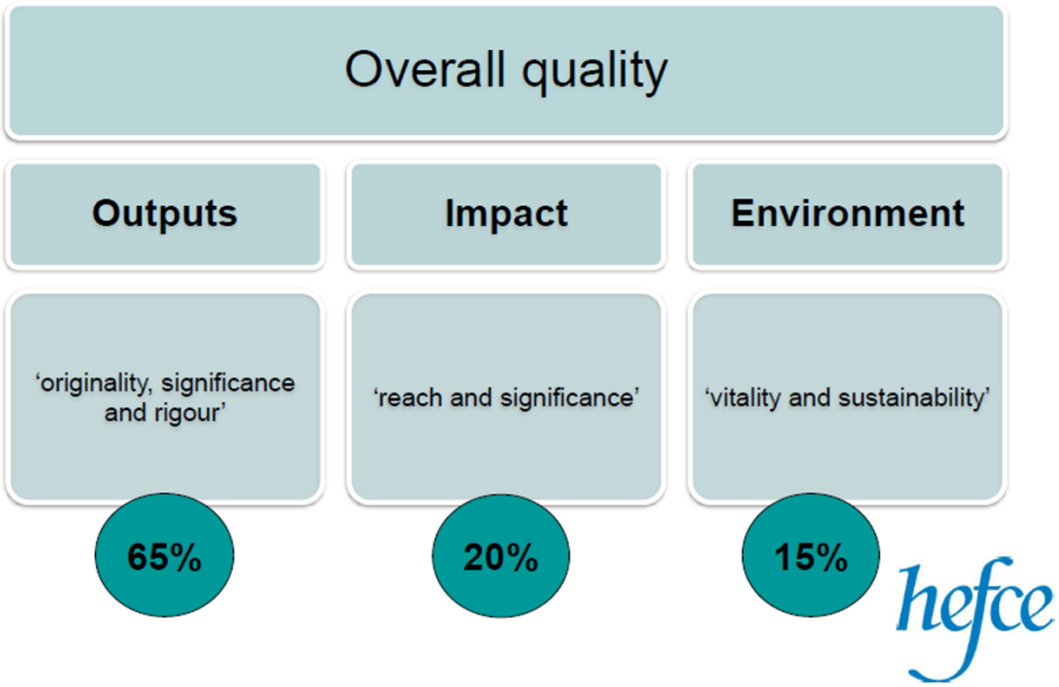


# Allocation

## Rewarding research impact

| The UK Dual Support System | A Brief History of Research Assessment in the UK |
|---|---|
| University research supported through the Research Councils (RCs, c£4b pa) and Funding Councils (FCs, c£2b pa)<br><br>The are separate FCs for each England, Scotland, Wales and Northern Ireland<br><br>Research Councils:<br>• Provide grants for prospective peer review of projects (ie anticipated outcome)<br>• Funding Councils:<br>• Provide block grant to support research infrastructure and seed funding<br>• Quality Related funding distributed on retrospective review of research performance | **1986 & 1989**: The 'Research Selectivity Exercises'<br>First UK wide assessment of research quality<br>• Assessed departments not universities<br>• Emphasis on research outputs (papers) and income<br>• In 1989 partly used in funding allocations<br><br>**1992, 1996, 2001 & 2008**: The 'Research Assessment Exercises' (RAE)<br>• Peer review of 'departments' by c70 subject based panels<br>• Assess quality of outputs, environment and esteem<br>• Open publication of submissions and results<br>• Evolved, being more sophisticated and influence<br>• Allocation of Quality Related funding |

# Research Excellence Framework (REF) 2014




***Impact is defined as*** *'any effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia'*

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http://www.ref.ac.uk/

## Aims of the REF

The four UK higher education funding bodies allocate about £2 billion per year of research funding to UK universities.

They aim to support a dynamic and internationally competitive UK research sector that makes a major contribution to economic prosperity, national wellbeing and the expansion and dissemination of knowledge.

To distribute funds selectively on the basis of quality, the funding bodies assess universities' research through a periodic exercise. This was previously known as the Research Assessment Exercise (RAE), and was last conducted in 2008.

The 2014 REF replaced the RAE. It assessed the quality and impact of UK universities' research in all disciplines and the results will be used to allocate research funding from 2015-16.

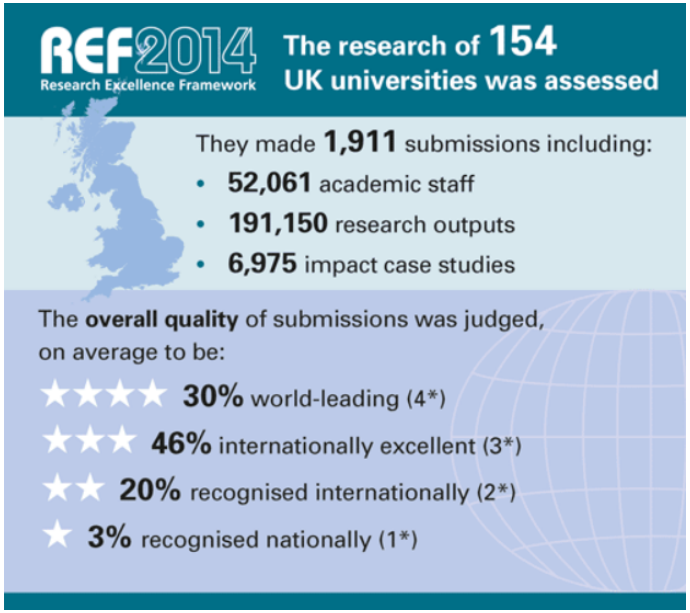
The REF is a process of expert review, carried out in 36 subject-based units of assessment (UOAs).

**2011-2012 Preparation**
The UK funding bodies appointed the REF expert panels, consulted the sector and published the criteria and guidelines for the exercise.

**2012-2013 Submissions**
Each institution decided which UOAs to submit in, and prepared their submissions. Submissions were made by 29 November 2013.

**2014 Assessment**
Expert panels – comprising 898 academics and 259 research users – reviewed the submissions. The results were published on 18 December 2014.

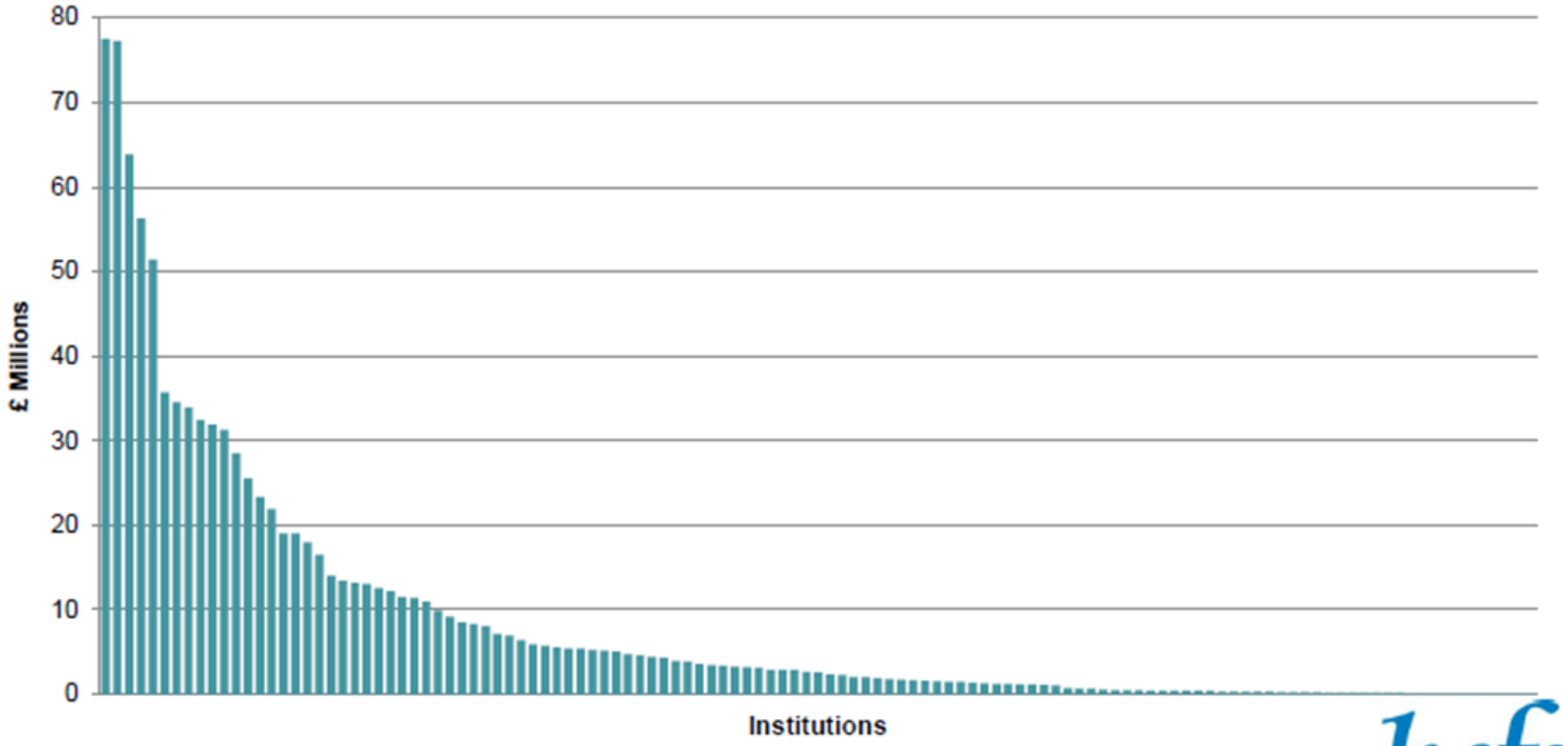
## Summary of results




**Average results for all submissions**

| | | 4* | 3* | 2* | 1* | U |
|---|---|---|---|---|---|---|
| Overall quality of all the submissions was, on average: | | 30% | 46% | 20% | 3% | 1% |
| Overall quality is derived from three elements – outputs, impact and environment. They were graded, on average: | Outputs | 22% | 50% | 24% | 4% | 1% |
| | Impact | 44% | 40% | 13% | 2% | 1% |
| | Environment | 45% | 40% | 13% | 2% | 0% |

## Mainstream research funding by institution (2014-15; England only)

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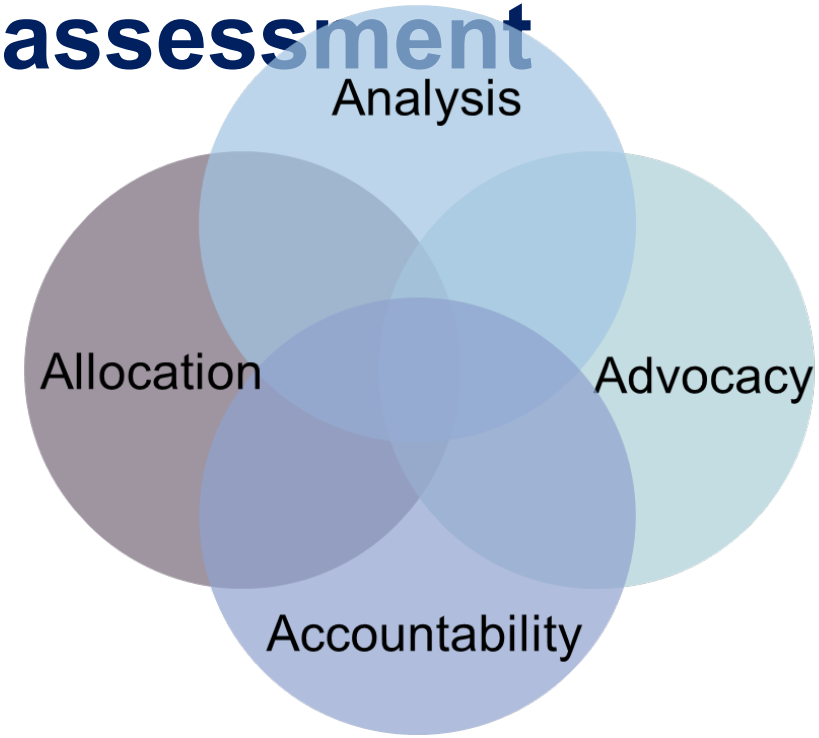
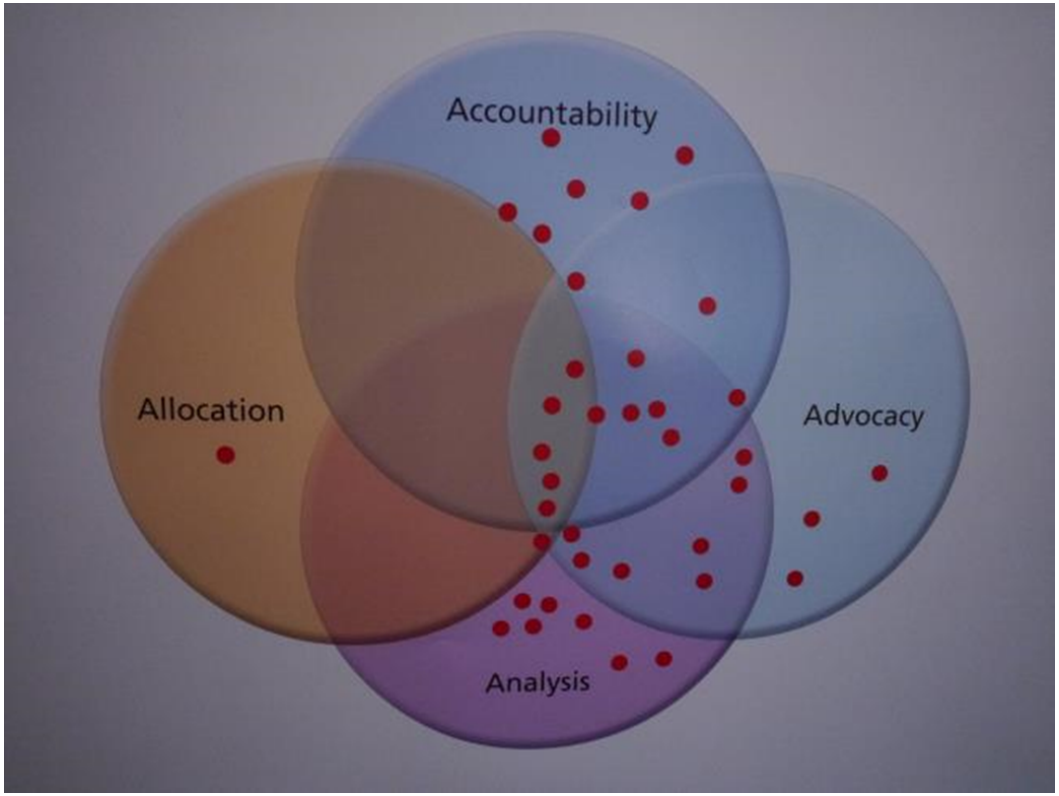
# Be clear on the primary purpose of your research impact assessment

**ACTIVITY**

**TIME**




# Barcelona 2013 ..

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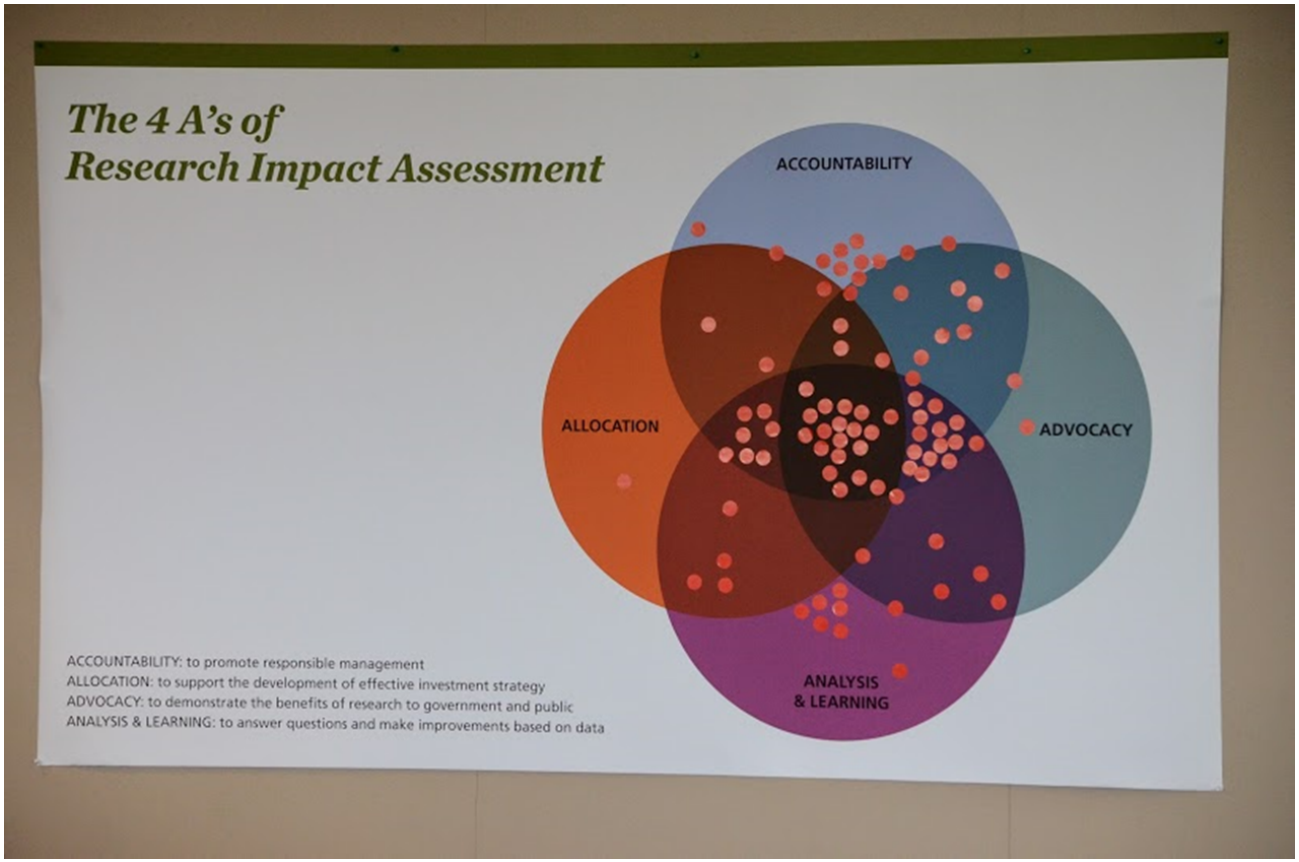
# Banff 2014 ..

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# Doha 2015 …


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# Why ‘settle’ on a single purpose?

While it is true that multiple purposes can be achieved by a single RIA, the purpose should inform and prioritise important decisions around the project scope:

- ✓What perspectives to include
- ✓What data to collect
- ✓What time span to consider
- ✓How to frame the final product

**How to decide**

- ❖ What is prompting the RIA?
- ❖ Who insitigated it?
- ❖ What questions NEED to be answered?
- ❖ How will it be resourced?
- ❖ Why now?
- ❖ What is the current ‘climate’?

# Understanding your context and challenges

Context

- Environmental scan
- Unit of analysis

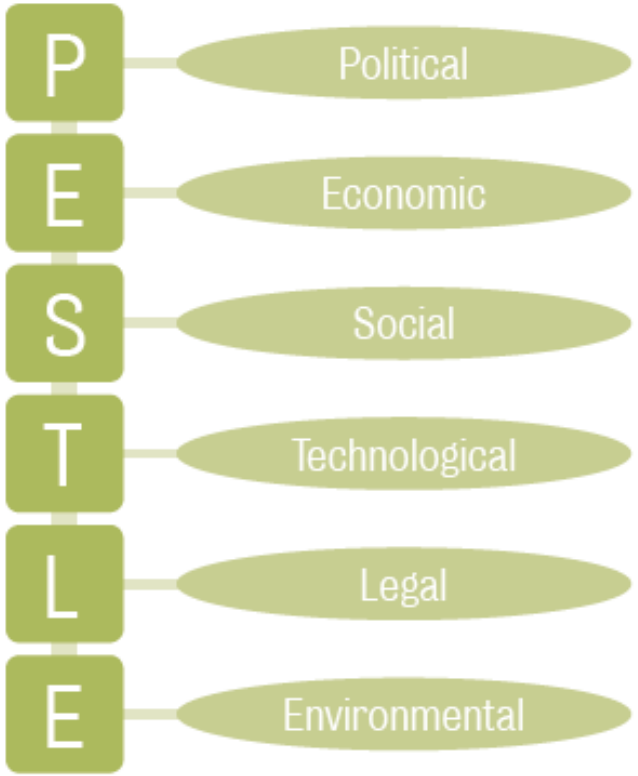
Challenges

- Attribution vs. Contribution
- The counterfactual
- Time matters
- Value for money of RIA

# Environmental scan

| | Internal factors | External factors |
|---|---|---|
| **Assumptions** | The beliefs you have about the management of your project(i.e. how the project will work and be delivered) | The beliefs you have about the project's the participants, partners or expected uptake and adoption |
| **Influencing factors** | Factors that lie **within** the control of project management which have a significant affect on outcomes<br>➢ *For example: levels of resourcing, support from superiors, ongoing access to required capability* | Factors that lie **beyond** the control of project management but which nevertheless have a significant affect on outcomes<br>➢ *For example: political, social context, economic shifts, or technologies* |

# What are the key drivers in your external environment ?




# Unit of analysis

The unit of analysis is the major entity that you are analysing in your study. For instance, any of the following could be a unit of analysis in a study:

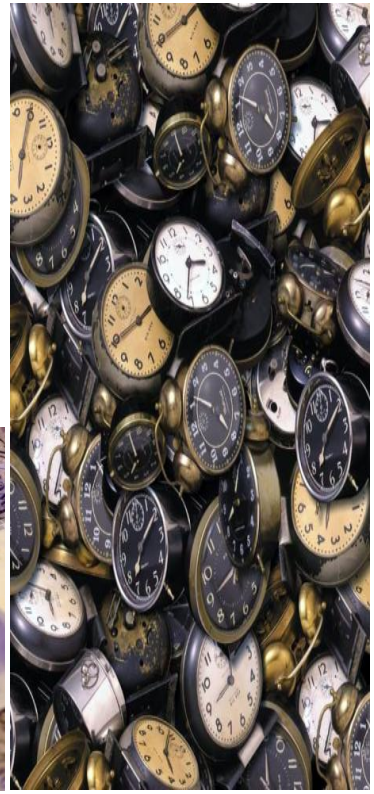
- individuals
- groups
- geographical units (town, census tract, state)
- social interactions (dyadic relations, divorces, arrests)

## Example: STEM study

- For example, if you are comparing the children in two classrooms on achievement test scores, the unit of analysis is the individual student because you have a score for each child.
- On the other hand, if you are comparing the two classes on their learning cultures, your unit of analysis is the classroom because you only have a culture score for the class as a whole and not for each individual student.

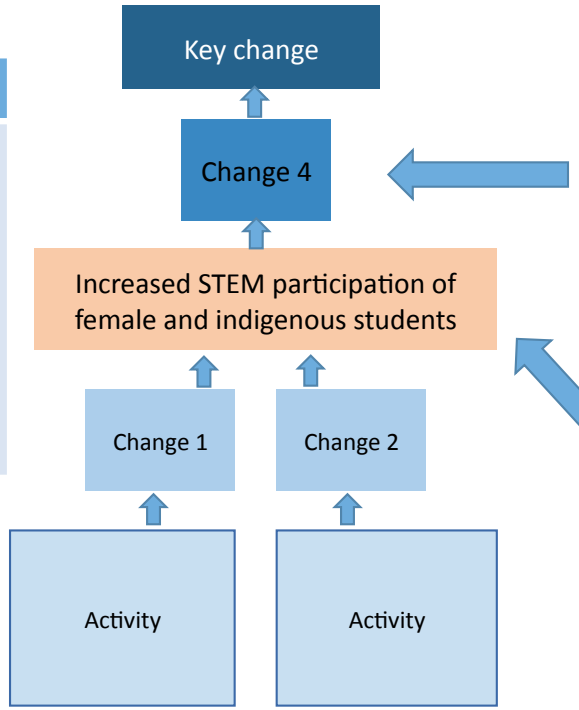
| Macro | Meso | Micro |
|---|---|---|
| Research & innovation ecosystem | Institution (funder, provider, etc.) | Individual or program (researcher, funding scheme) |

# Measuring and identifying impact is not easy



# Attribution vs. Contribution

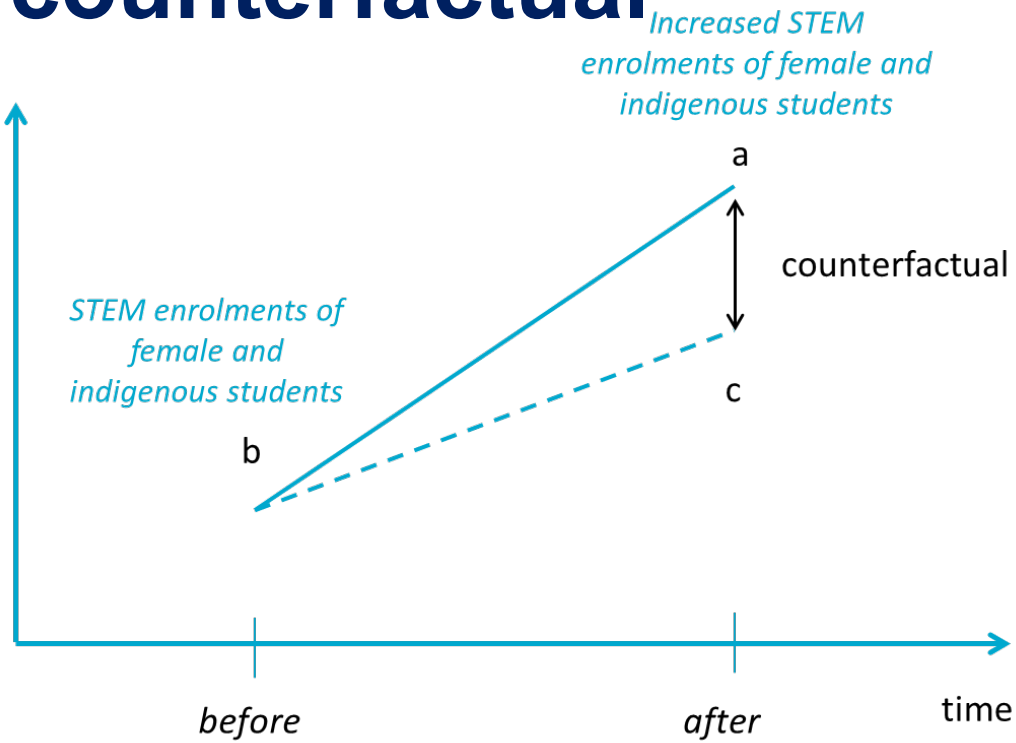
| Attribution | Contribution |
|---|---|
| Assertion that a reasonable (causal) connection can be made between a specific outcome & program activities & outputs | Determination that a program helped to cause observed outcomes |




Then there is no attribution to the program, even if other student enrolments in STEM subjects have increased

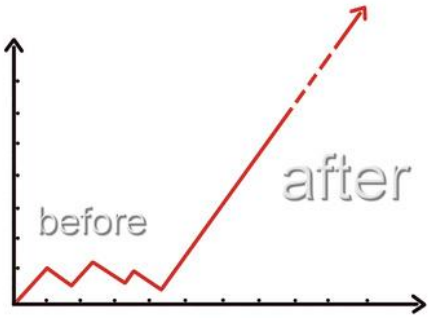
If enrolment of our target groups in STEM subjects does not increase…

# What is the counterfactual

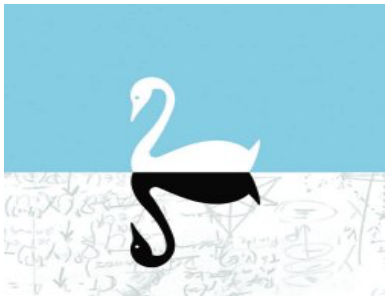



The counterfactual is about what would have happened anyway, without the project

# Do I need a baseline?




Baseline data is the information you have about the situation before you do anything, and is important to determine the impact of the project

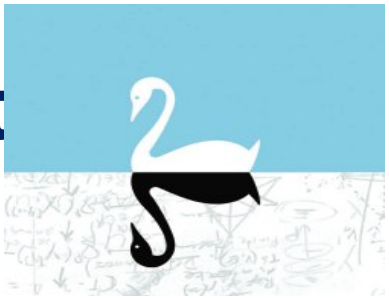


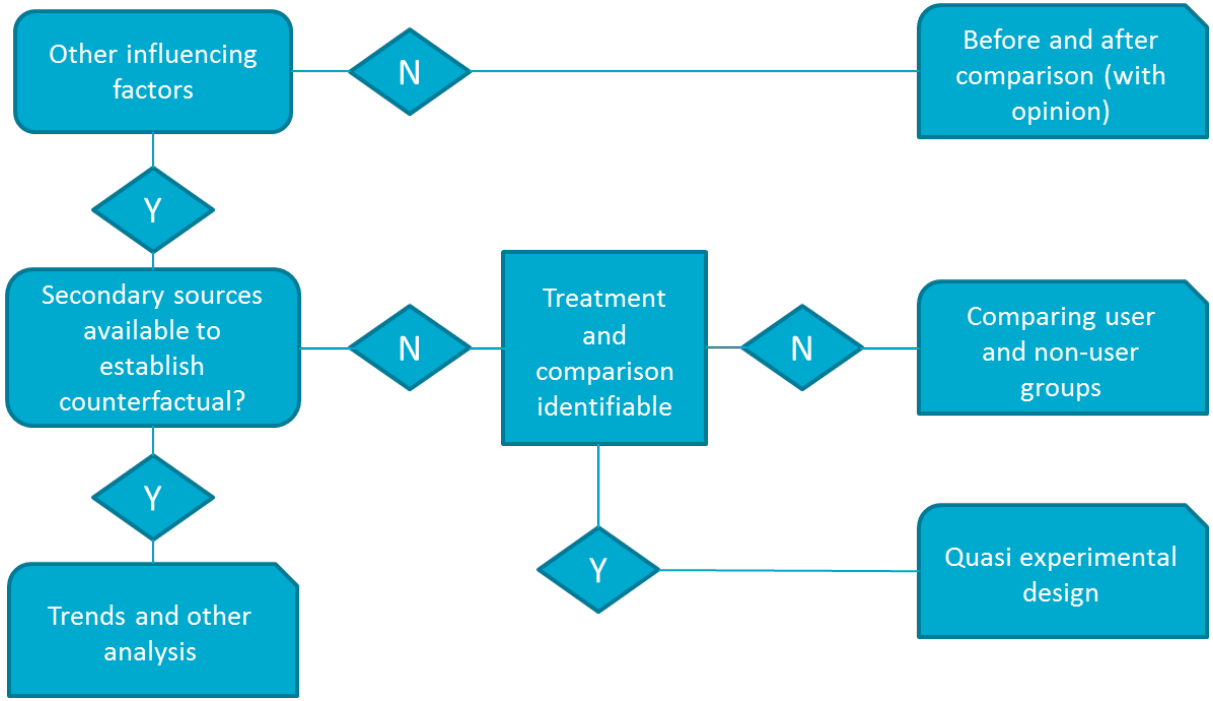
## Example: STEM baseline

**Baseline data may include:**

- Level of awareness of STEM subjects in the Australian tertiary student population
- The current numbers of female students who have successfully completed a STEM subject before the project starts
- Educators' perceptions of the quality of STEM teaching resources
- Frequency of STEM related reports and stories in Australian media
- Numbers of STEM teachers graduating from teacher training institutions.

# Ways to construct the counterfact



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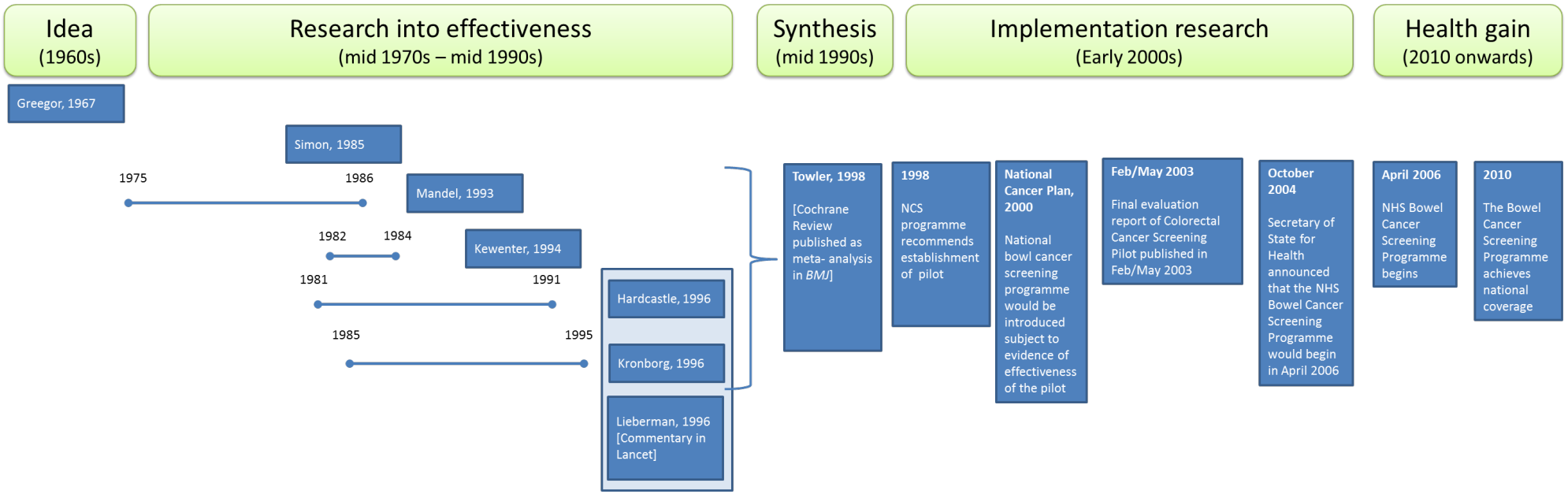
# A case study to illustrate why time matters

- Use of the guaiac-based faecal occult blood test (gFOBT) in the early detection of bowel cancer through to the establishment and rollout of the NHS' Bowel Cancer Screening Programme.
- Begins in 1967, with the suggestion that a gFOBT could be used in the home for early detection of bowel cancer
- Finishes in 2010 when the Bowel Cancer Screening Programme in England achieved national coverage.
- The case study excludes more recent technologies, such as flexible sigmoidoscopy, which are currently being piloted by the NHS Bowel Cancer Screening Programme
- The case study focuses on impact in England

# The history of gFOBT - timeline

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# Value for money of impact assessment: How much did REF cost?

| Impact assessment | Overall |
| --- | --- |
| £55m | £246m |
| or | or |
| AU$92m | AU$413m |
| Source: Manville et al, 2015 | Source: Technopolis, 2015 |

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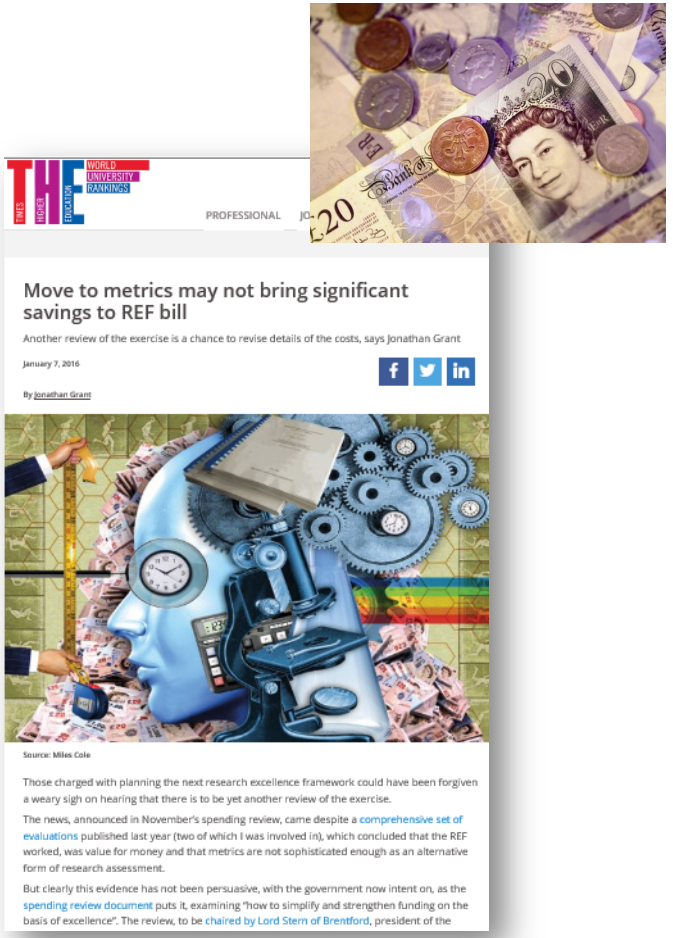
# But we need to frame costs carefully

- Absolute cost very high (£55m)

- But ‘transaction cost’ – ie cost of preparation versus the funding allocated from quality-related (QR) funding – very low

  - £55m / (20% impact weight of c£10.2b QR funding over 6 years) = 2.7%

  - (For whole of REF, including assessment of outputs and environment = 2.4%)




# Questions??

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# Key Messages

- Know why you are assessing research impact
  - What is the purpose of the research evaluation?
- Need to move from advocacy to accountability
- Important to ensure that public money is spent effectively
- RIA should be comparable, scalable, low-burden and transparent
- It is possible to analyse impact from narrative text
- The quantitative evidence supporting claims for impact was diverse and inconsistent, suggesting that the development of robust impact metrics is unlikely
- Essential to know your context before commencing an RIA
  - Environment, unit of analysis, baseline, counterfactual and attribution

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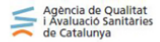


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